

EXHIBIT D8

	Document Ref:			
	Issue No. :	<00X>	Issue Date :	<DD/MM/YYYY>
	Copy No. :	01 02 03 04 05	No. of Pages :	< total no .of pages >
	Group :	< Group Name>		
	Document Classification :	<input type="checkbox"/> Secret <input type="checkbox"/> Confidential <input type="checkbox"/> Restricted <input type="checkbox"/> Unrestricted		
Title:			Project/System :	
Plan for Software Aspects of Certification of <LRU/Module Name> for <Platform name>			<System/Project Name>	
			Software Criticality Level :	
			DO-178B Level <A/ B/ C/ D>	
	Name & Designation		Signature	
Prepared By	<Design Rep Name>, < Designation>			
Reviewed By	<Project Leader Name>, <Designation> <AWG/QA HOD Name>, <Designation> <RCMA Rep Name>, <Designation>			
Approved By	< Design Head name>,<Designation> <RD,RCMA Name>, <Designation>			

<Design Firm Name & Address>

Document Copy Distribution List

Copy No.	DESIGNATION OF THE COPY HOLDER	ORGANISATION/DEPARTMENT
01	Design Group Head	Design Agency
02	RD	RCMA, Hyderabad
03	HOD	QC/ AWG, Design agency
04	Coordinator	Customer

Amendment History

Issue No.	Issue Date	Brief Description of Amendment	Change Request Ref.	Affected Pages	Affected Section	Change Effective From (Version/ Date)
001		Initial Issue	NA	NA	NA	Initial
002						

Table of Contents

1.	Introduction	5
1.1.	Purpose and Scope.....	5
1.2.	Part Number and Nomenclature	5
1.3.	Acronyms and Abbreviations	5
1.4.	Applicable documents.....	5
1.4.1.	External documents	5
1.4.2.	Internal documents.....	5
2.	System overview	5
2.1.	Functional allocation to the complex hardware	5
2.2.	Functional allocation to the software	5
2.3.	Architecture	5
2.4.	Programmable devices used	5
2.5.	Hardware/software interfaces.....	6
2.6.	System failure conditions.....	6
2.7.	Safety Features	6
3.	Software overview	6
3.1.	Resource sharing.....	6
3.2.	Redundancy	6
3.3.	Multiple-version dissimilar software	6
3.4.	Fault tolerance	6
3.5.	Timing and scheduling strategies.....	6
4.	Certification considerations	6
4.1.	Criticality of the system	6
4.2.	Summary of the certification basis	6
5.	Software life cycle	7
5.1.	Software Planning Process.....	7
5.1.1.	Objectives and activities	7
5.1.2.	Integral Processes	7
5.2.	Software Requirement Process.....	7
5.2.1.	Objectives and activities	7
5.2.2.	Integral Processes	7

5.3.	Software Design Process.....	7
5.3.1.	Objectives and activities	7
5.3.2.	Integral Processes	7
5.4.	Software Coding Process.....	7
5.4.1.	Objectives and activities	7
5.4.2.	Integral Processes	7
5.5.	Software Integration Process.....	8
5.5.1.	Objectives and activities	8
5.5.2.	Integral Processes	8
5.6.	Software Testing Process	8
5.6.1.	Objectives and activities	8
5.6.2.	Integral Processes	8
6.	Software life cycle data	8
7.	Schedule.....	8
7.1.	Master Project Schedule.....	8
7.2.	Stages of Involvement schedule	8
8.	Additional considerations	8
8.1.	Alternative methods of compliance.....	9
8.2.	Tool qualification	9
8.2.1.	Development tools.....	9
8.2.2.	Verification Tools	9
8.3.	Previously developed software.....	9
8.4.	Option-selectable software	9
8.5.	User-modifiable software	9
8.6.	COTS software.....	9
8.7.	Field-loadable software	9
8.8.	Product service history	9
8.9.	Deviations and modifications to plans.....	9

1. Introduction

This section provides introduction to the project and requirement for the PSAC document.

1.1.Purpose and Scope

1.2.Part Number and Nomenclature

In this section, software components are given a unique part number and nomenclature to identify them for configuration management.

1.3.Acronyms and Abbreviations

In this section all the abbreviations and acronyms are listed with their expanded names.

1.4.Applicable documents

1.4.1. External documents

This section lists the documents of external origin which are relevant for this project

1.4.2. Internal documents

This section lists the documents of internal origin which are relevant for this project

2. System overview

This section provides an overview of the system, including a description of its functions.

2.1. Functional allocation to the complex hardware

This section briefly describes those system functions which are carried out by the complex electronic hardware such as FPGA/ CPLD/ ASIC.

2.2. Functional allocation to the software

This section briefly describes those system functions which are responsibility of the software.

2.3.Architecture

This section provides the information regarding the hardware architecture and software architecture of the system and the suitability / compatibility among these.

2.4.Programmable devices used

This section lists the programmable devices used in the system, like, processors, microcontrollers, FPGA, CPLD etc. The list of software components is mapped to the devices.

2.5. Hardware/software interfaces

This section describes the hardware-software interfaces, i.e. where, when and how inputs to the software are available from the hardware and outputs of the software are taken by the hardware.

2.6. System failure conditions

This section lists the various failure conditions of the system and the potential failures contributed by the software functions.

2.7. Safety Features

This section provides overview of the safety features incorporated in the system.

3. Software overview

This section briefly describes the software functions, states and modes with emphasis on the proposed safety and partitioning concepts.

3.1. Resource sharing

Mention if any time-sharing, memory sharing or bus sharing envisaged between various software components.

3.2. Redundancy

Mention if any redundancy is available in the system and software components.

3.3. Multiple-version dissimilar software

Mention if any multiple versions of software development is planned.

3.4. Fault tolerance

List the features available in the software for robustness, prevention of fault propagation and recovery or degraded performance in case of failures.

3.5. Timing and scheduling strategies

Mention the strategies used to meet the timing constraints given in the technical specifications. Give the scheduling strategies if multiple tasks are expected or multiple timing requirements are specified for algorithms.

4. Certification considerations:

4.1. Criticality of the system

This section states the proposed software level(s) and summarizes the justification provided by the system safety assessment process

4.2. Summary of the certification basis

This section provides a summary of the software certification basis, including the means of compliance. The summary explains how the objectives of each software life cycle

process will be satisfied, and specifies the organizations to be involved, the organizational responsibilities, for the life cycle and certification liaison processes.

5. Software life cycle

This section defines the software life cycle to be used and includes a summary of each software life cycle and its processes for which detailed information is defined in their respective software plans.

5.1. Software Planning Process

5.1.1. Objectives and activities

This section lists the objectives pertaining to Planning process and the activities associated with completing the objectives.

5.1.2. Integral Processes

This sectional brings out the verification, Quality Assurance, configuration management and certification activities associated with the Planning process.

5.2. Software Requirement Process

5.2.1. Objectives and activities

This section lists the objectives pertaining to Requirement process and the activities associated with completing the objectives.

5.2.2. Integral Processes

This sectional brings out the verification, Quality Assurance, configuration management and certification activities associated with the Requirement process.

5.3. Software Design Process

5.3.1. Objectives and activities

This section lists the objectives pertaining to Design process and the activities associated with completing the objectives.

5.3.2. Integral Processes

This sectional brings out the verification, Quality Assurance, configuration management and certification activities associated with the Design process.

5.4. Software Coding Process

5.4.1. Objectives and activities

This section lists the objectives pertaining to Coding process and the activities associated with completing the objectives.

5.4.2. Integral Processes

This sectional brings out the verification, Quality Assurance, configuration management and certification activities associated with the Coding process.

5.5. Software Integration Process

5.5.1. Objectives and activities

This section lists the objectives pertaining to Integration process and the activities associated with completing the objectives.

5.5.2. Integral Processes

This sectional brings out the verification, Quality Assurance, configuration management and certification activities associated with the Integration process.

5.6. Software Testing Process

5.6.1. Objectives and activities

This section lists the objectives pertaining to Testing process and the activities associated with completing the objectives.

5.6.2. Integral Processes

This sectional brings out the verification, Quality Assurance, configuration management and certification activities associated with the testing process.

6. Software life cycle data

This section specifies the software life cycle data that will be produced and controlled by the software life cycle processes. This section also describes the relationship of the data to each other or to other data defining the system, the software life cycle data to be submitted to the certification authority, the form of the data, and the means by which software life cycle data will be made available to the certification authority.

Sl.No.	Document	Config Control level (CC1 /CC2)	Approval by	Availability to Certification authority (at stage)	In the form of

7. Schedule

This section describes the means the applicant will use to provide the certification authority with visibility of the activities of the software life cycle processes so reviews can be planned. It brings out which of the objectives are demonstrated for verification at what stage of the lifecycle (in terms of SOIs, analyses, reviews and testing).

7.1. Master Project Schedule

7.2. Stages of Involvement schedule

8. Additional considerations

This section describes specific features that may affect the certification process,

8.1.Alternative methods of compliance

Mention if any alternate methods for compliance to DO-178B is proposed.

8.2.Tool qualification

8.2.1. Development tools

Mention the requirement and plan for development tool qualification.

8.2.2. Verification Tools

Mention the requirement and plan for development tool qualification.

8.3.Previously developed software

Mention whether any previously developed software (which has undergone DO-178B qualification for any level) is part of the present version.

8.4.Option-selectable software

Mention if any part of the software is invoked based on selection from external source (other systems/ operator/ aircraft configuration etc)

8.5.User-modifiable software

Mention if any part of the software is modifiable by the user.

8.6.COTS software

Mention if any externally developed software is components are used in the build of the software.

8.7.Field-loadable software

Mention if any externally developed software or components are used in the build of the software.

8.8.Product service history

Mention if the software is already being used in the field and what is the feedback / evolution of the software throughout its deployment.

8.9.Deviations and modifications to plans

Mention how the changes to the plan documents are approved and incorporated in the processes.